

## CLAIMS

What is claimed is:

1. A network device, comprising:  
a core processor and core memory; and  
5 a link integrity module in communication with said core processor, said link integrity module being powered separately from said core processor and said core memory;  
said network device including a D3 type cold power mode wherein said link integrity module maintains power.  
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2. The network device according to claim 1, wherein:  
in said D3 type cold power mode, said network device removes power from said core memory.  
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3. The network device according to claim 1, wherein:  
in said D3 type cold power mode, said network device removes power from said core processor.  
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4. The network device according to claim 1, further comprising:  
a network interface.  
25
5. The network device according to claim 1, wherein:  
said network device is a HomePNA device.
6. The network device according to claim 1, wherein:  
said network device is a BLUETOOTH device.

7. The network device according to claim 1, wherein:  
said network device is a Homeplug device.

8. The network device according to claim 1, wherein:  
said network device is a wired device.

9. The network device according to claim 8, wherein said  
wired device is one of:

a HomePNA device; and  
a G.989.1 compliant device.

10. The network device according to claim 1, wherein:  
said network device is a power line device.

11. The network device according to claim 10, wherein:  
said power line device is a Home Plug device.

12. The network device according to claim 1, wherein:  
said network device is a wireless device.

13. The network device according to claim 12, wherein said  
wireless device is one of:

a HomeRF device; and  
a IEEE 802.11 compliant device.

14. The network device according to claim 1, wherein:  
said wireless device is an optical communications network  
device.

15. The network device according to claim 14, wherein:  
said optical communications network device is an Infrared  
device.

5                   16. A method of maintaining data-based link integrity in a  
powered down network device, comprising:

                  providing a link integrity module powered separately from  
core functionality in said network device; and

                  removing power from said core functionality of said network  
10 device while maintaining power to said separately powered link integrity  
module.

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15                   17. The method of providing data-based link integrity in a  
powered down mode according to claim 16, wherein:  
said network device is a HomePNA device.

                  18. The method of providing data-based link integrity in a  
powered down mode according to claim 16, wherein:  
said network device is a BLUETOOTH device.

20                   19. The method of providing data-based link integrity in a  
powered down mode according to claim 16, wherein:  
said network device is a Homeplug device.

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20. Apparatus for maintaining data-based link integrity in a powered down network device, comprising:

means for providing a link integrity module powered separately from core functionality in said network device; and

5 means for removing power from said core functionality of said network device while maintaining power to said separately powered link integrity module.

21. The apparatus for providing data-based link integrity in a powered down mode according to claim 20, wherein:

said network device is a HomePNA device.

22. The apparatus for providing data-based link integrity in a powered down mode according to claim 20, wherein:

15 said network device is a BLUETOOTH device.

23. The apparatus for providing data-based link integrity in a powered down mode according to claim 20, wherein:

said network device is a Homeplug device.

24. A method of providing both physical and data-based link integrity capability in a network, comprising:

determining if another network device in said network requires physical link integrity signaling;

25 if another network device in said network requires physical link integrity signaling, outputting a data-based link integrity packet in a physical link integrity mode; and

if no other network device in said network requires physical link integrity signaling, outputting a data-based link integrity packet in a non-physical link integrity mode.

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25. The method of providing both physical and data-based link integrity capability in a network according to claim 24, wherein:  
said network is a HomePNA network.

5                    26. The method of providing both physical and data-based link integrity capability in a network according to claim 24, wherein:  
said another network device requiring physical integrity signaling is a HomePNA version 1.0 device.

10                   27. Apparatus for providing both physical and data-based link integrity capability in a network, comprising:  
means for determining if another network device in said network requires physical link integrity signaling;  
means for outputting a data-based link integrity packet in a  
15 physical link integrity mode if another network device in said network requires physical link integrity signaling; and  
means for outputting a data-based link integrity packet in a non-physical link integrity mode if no other network device in said network requires physical link integrity signaling.

20                   28. The apparatus for providing both physical and data-based link integrity capability in a network according to claim 27, wherein:  
said network is a HomePNA network.

25                   29. The apparatus for providing both physical and data-based link integrity capability in a network according to claim 27, wherein:  
said another network device requiring physical integrity signaling is a HomePNA version 1.0 device.

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